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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 10/711,644   | 09/29/2004  | Wei Lu               | FIS920040037US1      | 5643             |
| 29371  | 7590        | 05/01/2006           | EXAMINER             |                  |
| CANTOR COLBURN LLP - IBM FISHKILL<br>55 GRIFFIN ROAD SOUTH<br>BLOOMFIELD, CT 06002 |             |                      | YANTORNO, JENNIFER M |                  |
|  |             |                      | ART UNIT             | PAPER NUMBER     |
|  |             |                      | 2881                 |                  |
| DATE MAILED: 05/01/2006  |             |                      |                      |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                   |              |  |
|------------------------------|-------------------|--------------|--|
| <b>Office Action Summary</b> | Application No.   | Applicant(s) |  |
|                              | 10/711,644        | LU, WEI      |  |
|                              | Examiner          | Art Unit     |  |
|                              | Jennifer Yantorno | 2881         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments, filed 4/21/2006, with respect to claims 1-16 have been fully considered and are persuasive. The final rejection of claims 1-16 has been withdrawn. A new non-final rejection is below.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 8-13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Musil et al. (US 6,753,538), in view of Chang et al. (US 6,646,259).

Regarding claims 1 and 9, '538 teaches a method for preparing a specimen for application of microanalysis thereto, the method comprising forming an initial conductive layer over only a localized area of interest, without blanket coverage of said initial conductive layer, said initial conductive layer formed through low-energy beam deposition process (Col. 3, ll. 65-Col. 4, ll. 3, Col. 4, ll. 52-65, Col. 5, ll. 24, Col. 6, ll. 53, Col. 12, ll. 48-54). '259 teaches removing a volume of material surrounding the area of interest by forming a pair of trenches in a bulk material having the area of interest formed thereon, thereby forming a membrane including the area of interest and the initial conductive layer over the area interest, and removing the membrane from the bulk material (Col. 4, ll. 7-17). It would have been obvious to form trenches in a bulk material

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thereby forming a membrane and removing the membrane from the bulk material as this is a well-known method of preparing TEM samples.

Regarding claim 2, '538 teaches that the low-energy beam deposition process comprises electron beam deposition (Col. 3, ll. 65-Col. 4, ll. 3, Col. 4, ll. 52-65, Col. 5, ll. 24, Col. 6, ll. 53, Col. 12, ll. 48-54).

Regarding claims 3 and 11, '538 teaches that the conductive later is made of tungsten (Col. 12, ll. 48-54).

Regarding claims 4 and 12, '259 teaches that the conductive layer is formed at a thickness of up to 20 nm (Col 3, ll. 41-43).

Regarding claims 5 and 13, '259 teaches that the conductive layer is form over an area of about 1 micron by about 10 microns (Col 4, ll. 7-12).

Regarding claims 8 and 16, '259 teaches removing a volume of material surrounding the area of interest is implemented by FIB milling (Col. 4, ll. 7-12)

Regarding claim 10, '259 teaches that the microanalysis comprises tunneling electron microscopy (Col. 4, ll. 7-12).

Claims 6, 7, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Musil et al. (US 6,753,538), in view of Chang et al. (US 6,646,259 B2), further in view of Engelmann et al. (US 6,303,399 B1).

Regarding claims 6, 7, 14, and 15, the aforementioned prior art meets all claim limitation with the exception of implementing high-energy ion beam deposition for thickening the initial conductive layer. '399 teaches implementing high-energy ion beam deposition for the conductive layer (Col. 5, ll. 55-59). It would have been obvious to one

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skilled in the art at the time of the invention to implementing high-energy ion beam deposition for thickening the initial conductive layer as this method is faster than low-energy electron beam deposition and is notoriously known in the art.


### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Yantorno whose telephone number is (571) 272-5918. The examiner can normally be reached on Monday-Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JY

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
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